

Notice of Allowability

Application No.

10/713,948

Examiner

Callie E. Shosho

Applicant(s)

WOLLENBERG ET AL.

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 3/23/07, telephonic interviews conducted 3/14/07, 3/22/07, 4/4/07, 4/5/07.
2. ☒ The allowed claim(s) is/are 4,6-8,11,13-17,20-44 and 58.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>4/5/07</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

Examiner's Amendment

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

- (1) Claim 11, line 2, before "recovering", change "comprises" to "comprising".
- (2) Claim 14, line 1, after "A" and before "for", insert "process".
- (3) Claim 30, line 1, delete "Claim 30." and insert "Claim 30.".
- (4) Claim 30, line 1, after "claim" and before "wherein", delete "29" and insert "28".
- (5) Claim 33, line 1, after "claim" and before "wherein", delete "32" and insert "31".
- (6) Claim 34, line 1, after "claim" and before "wherein", delete "32" and insert "31".
- (7) Claim 39, line 5, after "from" and before "to" delete "about 9" and insert "at least 10".

(8) Claim 40, line 5, after “from” and before “to” delete “about 9” and insert “at least 10”.

(9) Claim 43, line 3, after “hydroxide”, delete “or” and insert “,”.

(10) Cancel claim 45.

(11) Cancel claim 46.

(12) Cancel claim 47.

(13) Please add new claim 58 as follows:

Claim 58 (new). The process of claim 6 wherein the alkylene carbonate is added to the reaction mixture over a time period for about 30 minutes to about 90 minutes.

2. Authorization for this examiner’s amendment was given in a telephone interviews with Sarita Kelley on 4/4/07 and 4/5/07.

Statement of Reasons for Allowance

3. The present claims are allowable over the “closest” prior art Vaughan (U.S. 4,218,328), Smrcka et al. (U.S. 5,370,805), and Wollenberg (U.S. 4,803,002) for the following reasons:

Vaughan discloses process for preparing overbased lubricating oil additives comprising forming a reaction mixture by combining Mannich condensation product of alkyl phenol wherein the alkyl group contains 8-128 carbon atoms, Group II metal oxide, hydroxide, or alkoxide and mixture of promoters including ethylene glycol, water, and ethanol. The Mannich condensation product of alkyl phenol is prepared by reacting alkyl phenol, aldehyde, and nitrogen-containing compound. It is further disclosed that the ratio of carbon dioxide to calcium is 0.3-0.5.

However, there is no disclosure or suggestion in Vaughan of alkylene carbonate as required in all the present claims. There is no disclosure or suggestion in Vaughan of process comprising forming a reaction mixture by combining the Mannich condensation product of alkyl phenol, Group II metal oxide, hydroxide, or alkoxide, one or more promoters, and a alkylene carbonate wherein the combining is carried out for a time and at a temperature sufficient to form in situ carbon dioxide and alkylene glycol wherein the alkylene carbonate is added to the reaction mixture over a time period of about 15 minutes to about 120 minutes as required in present claim 6, no disclosure or suggestion of process comprising forming a reaction mixture by combining the Mannich condensation product of alkylphenol, one or more promoters, and Group II metal oxide, hydroxide, or alkoxide and then contacting this reaction mixture with an alkylene carbonate for a time and at a temperature sufficient to form in situ carbon dioxide and alkylene glycol wherein the alkylene carbonate is added to the reaction mixture over a time period of about 15 minutes to about 120 minutes as required in present claim 14, and no disclosure or

suggestion of process comprising forming a first reaction mixture by combining alkylphenol with aldehyde and amine in the presence of diluent oil, contacting the first reaction mixture with a second reaction mixture comprising the Group II metal oxide, hydroxide, or alkoxide and promoter to form a third reaction mixture, and then contacting the third reaction mixture with an alkylene carbonate for a time and at a temperature sufficient to form in situ carbon dioxide and alkylene glycol as required in present claim 21.

Smrcka et al. disclose process for making calcium Mannich alkyl phenate which comprises forming a reaction mixture by combining (i) Mannich condensation product of alkyl phenol formed by reacting alkyl phenol, paraformaldehyde, and amine, (ii) lime, i.e. calcium oxide, and (iii) ethylene glycol, i.e. promoter.

However, there is no disclosure in Smrcka et al. of alkylene carbonate as required in all the present claims. There is no disclosure or suggestion in Smrcka et al. of process comprising forming a reaction mixture by combining the Mannich condensation product of alkyl phenol, Group II metal oxide, one or more promoters, and a alkylene carbonate wherein the combining is carried out for a time and at a temperature sufficient to form in situ carbon dioxide and alkylene glycol wherein the alkylene carbonate is added to the reaction mixture over a time period of about 15 minutes to about 120 minutes as required in present claim 6, no disclosure or suggestion of process comprising forming a reaction mixture by combining the Mannich condensation product of alkylphenol, one or more promoters, and Group II metal oxide and then contacting this reaction mixture with an alkylene carbonate for a time and at a temperature sufficient to form in situ carbon dioxide and alkylene glycol wherein the alkylene carbonate is added to the reaction mixture over a time period of about 15 minutes to about 120 minutes as

required in present claim 14, and no disclosure or suggestion of process comprising forming a first reaction mixture by combining the alkylphenol with aldehyde and amine in the presence of diluent oil, contacting the first reaction mixture with a second reaction mixture comprising the Group II metal oxide and promoter to form a third reaction mixture, and then contacting the third reaction mixture with an alkylene carbonate for a time and at a temperature sufficient to form in situ carbon dioxide and alkylene glycol as required in present claim 21. Further, there is no disclosure in Smrcka et al. of second promoter as required in each of present claims 6 and 14. Additionally, it is noted that Smrcka et al. disclose process comprising forming a first reaction mixture by combining alkylphenol, aldehyde, and amine in presence of diluent oil, contacting the reaction mixture with calcium oxide, and then adding ethylene glycol, i.e. promoter. This is in direct contrast to present claim 21 that requires forming a first reaction mixture by combining the alkylphenol with aldehyde and amine in the presence of diluent oil and then contacting the first reaction mixture with a second reaction mixture comprising the Group II metal oxide and promoter.

Wollenberg discloses reacting alkylene carbonate with Mannich base such as that prepared by reacting alkylphenol, formaldehyde, and amine.

However, there is no disclosure in Wollenberg of Group II metal oxide, hydroxide, or C₁-C₆ alkoxide or promoter(s) as required in all the present claims and no disclosure or suggestion of adding the alkylene carbonate over a time period of about 15 minutes to about 120 minutes as required in each of present claims 6 and 14. There is no disclosure or suggestion in Wollenberg of process comprising forming a reaction mixture by combining the Mannich condensation product of alkyl phenol, a Group II metal oxide, hydroxide, or alkoxide, one or more promoters,

and the alkylene carbonate wherein the combining is carried out for a time and at a temperature sufficient to form in situ carbon dioxide and alkylene glycol wherein the alkylene carbonate is added to the reaction mixture over a time period of about 15 minutes to about 120 minutes as required in present claim 6, no disclosure or suggestion of process comprising forming a reaction mixture by combining the Mannich condensation product of alkylphenol, one or more promoters, and a Group II metal oxide, hydroxide, or alkoxide and then contacting this reaction mixture with alkylene carbonate for a time and at a temperature sufficient to form in situ carbon dioxide and alkylene glycol wherein the alkylene carbonate is added to the reaction mixture over a time period of about 15 minutes to about 120 minutes as required in present claim 14, and no disclosure or suggestion of process comprising forming a first reaction mixture by combining the alkylphenol with aldehyde and amine in the presence of diluent oil, contacting the first reaction mixture with a second reaction mixture comprising a Group II metal oxide, hydroxide, or alkoxide and a promoter to form a third reaction mixture, and then contacting the third reaction mixture with an alkylene carbonate for a time and at a temperature sufficient to form in situ carbon dioxide and alkylene glycol as required in present claim 21.

Thus, it is clear that Vaughan, Smrcka et al., and Wollenberg, either alone or in combination, do not disclose or suggest the present invention.

In light of the above, it is clear that the rejections of record are untenable and so, the present claims are passed to issue.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CS
4/5/07


Callie E. Shosho
Primary Examiner
Art Unit 1714